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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/944,344	09/04/2001	Shiroshi Matsuki	50352-02	9915

7590 12/11/2003  
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EXAMINER

WONG, EDNA

ART UNIT PAPER NUMBER

1753

DATE MAILED: 12/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/944,344	<b>Applicant(s)</b> MATSUKI ET AL.	
	<b>Examiner</b> Edna Wong	<b>Art Unit</b> 1753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) 4-13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____.    |
| 2) <input checked="" type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                      | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)   |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>See Other</u> . | 6) <input checked="" type="checkbox"/> Other: <u>See Continuation Sheet</u> . |

Continuation of Attachment(s) 6). Other: November 8, 2001 and November 10, 2003 .

***Election/Restrictions***

Applicant's election with traverse of Group I, claims **1-3**, in the Response to Restriction Requirement dated November 10, 2003 is acknowledged. The traversal is on the ground(s) that the restriction requirement is not proper because a generic concept of the invention was presented and that the three groups of the claims are interrelated and all should be examined in this single application. This is not found persuasive because:

Group I is directed to a method of making copper oxide.

Group II is directed to a copper oxide product and a method of using the copper oxide product. The invention defined in a product by process claim is a product, not a process. *In re Bridgeford* 679, 149 USPQ 55 (CCPA 1966). The copper oxide can be made by electrolyzing electrolytic copper in a sodium sulfate bath.

Group III is directed to a method of making basic copper carbonate. The reaction conditions of this method are not required in Group I or Group II. Thus, the invention of Group III is distinct from Group I and Group II.

The requirement is still deemed proper and is therefore made FINAL.

Accordingly, claims **4-13** are withdrawn from consideration as being directed to a non-elected invention.

***Specification***

I. The abstract of the disclosure is objected to because the words "which does not form a reducing atmosphere" (from page 31, line 6) should be deleted because this is repetitive. Correction is required. See MPEP § 608.01(b).

II. The disclosure is objected to because of the following informalities:  
page 4, line 11, the words "ammonia(NH<sub>4</sub>)and" should be amended to the words -- ammonia (NH<sub>4</sub>) and --.

page 8, line 1, the number "2" should be amended to the number -- 12 --.

page 15, line 3, the words "concentration(CI concentration)" should be amended to the words -- (concentration (CI concentration) --.

page 17, line 7, the words "solution(temperature)" should be amended to the words -- solution (temperature --.

page 19, line 3, the words "pH(detected pH)" should be amended to the words -- pH (detected pH) --.

page 23, line 38, the words "side(fed)" should be amended to the words -- side

(fed --.

Appropriate correction is required.

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

***Claim Rejections - 35 USC § 112***

Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

**Claim 3**

lines 4-5, the alternative expression of the Markush group is improper. MPEP 2173.05(h). The words -- the group consisting of-- should be inserted after the word "from" (from claim 3, line 5).

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by **Bartley** (US Patent No. 4,677,234).

Bartley teaches a method for manufacturing a copper electroplating material comprising the step of:

heating basic copper carbonate (col. 6, lines 59-62) to a temperature of 250°C to 800°C (= from about 200°C to about 500°C) in an atmosphere which is not rendered reductive to carry out thermal decomposition of the basic copper carbonate (= calcination involves high temperature heating under oxidizing conditions so that the carbonate is decomposed and the volatile material is expelled (col. 7, lines 21-46), to thereby produce easily dissolved copper oxide constituting the copper electroplating material (= copper oxide).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

I. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Bartley** (US Patent No. 4,677,234) as applied to claim 1 above, and further in view of **Gottfried**

et al. (US Patent No. 4,659,555).

Bartley is as applied above and incorporated herein.

Bartley does not teach wherein the basic copper carbonate is obtained by mixing an aqueous solution of a copper salt selected from the group consisting of copper chloride, copper sulfate and copper nitrate and an aqueous solution of carbonate of a material selected from alkaline metal, alkaline earth metal and ammonia ( $\text{NH}_4$ ) with each other, reacting both aqueous solutions with each other while heating them, to thereby deposit a reaction product, and separating the reaction product by filtration.

However, Gottfried teaches a process for preparing basic copper carbonated comprising the steps of:

(a) mixing an aqueous solution of a copper salt selected from the group consisting of copper chloride, copper sulfate and copper nitrate (= a waste solution from copper etching processes of  $\text{CuCl}_2$ ) and an aqueous solution of carbonate of a material selected from alkaline metal, alkaline earth metal and ammonia ( $\text{NH}_4$ ) (= sodium carbonate solution) with each other; and

(b) reacting both aqueous solutions with each other while heating them (= a temperature of  $60^\circ\text{C}$ ), to thereby deposit a reaction product (= basic copper carbonate as a light green precipitated sludge), and separating the reaction product by filtration (filtered, washed and dried) [col. 2, line 56 to col. 3, line 6].



Thus, the invention as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made because one skilled in the art would have been motivated to have modified the method of Bartley with wherein the basic copper carbonate is obtained by mixing an aqueous solution of a copper salt selected from the group consisting of copper chloride, copper sulfate and copper nitrate and an aqueous solution of carbonate of a material selected from alkaline metal, alkaline earth metal and ammonia ( $\text{NH}_4$ ) with each other, reacting both aqueous solutions with each other while heating them, to thereby deposit a reaction product, and separating the reaction product by filtration because Bartley is silent as to how the copper carbonate is obtained. Thus, it is well within the skill of the artisan to obtain the copper carbonate by the process disclosed by Gottfried (col. 2, line 56 to col. 3, line 6) because the basic copper carbonate so obtained is particularly suitable as a feed additive and for the preparation of catalysts as taught by Gottfried (col. 2, lines 49-51).

II. Claims **2 and 3** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Bartley** (US Patent No. 4,677,234) in combination with **Gottfried et al.** (US Patent No. 4,659,555).

Bartley and Gottfried et al. are as applied for the reasons as explained above and incorporated herein.

Bartley does not teach washing the easily dissolved copper oxide with water to

provide the copper electroplating material.

However, the invention as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made because one skilled in the art would have been motivated to have modified the method of Bartley by washing the easily dissolved copper oxide with water to provide the copper electroplating material because washing is well within the skill of the artisan to remove contaminants on a reaction product.

#### ***Citations***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

**Pasek et al.** (US Patent No. 5,492,681) is cited to teach that copper oxide has been produced commercially by the thermal decomposition of basic copper carbonate (col. 1, lines 21-25) and has a range of commercial uses including as a reactant in electroplating processes (col. 1, lines 10-15).

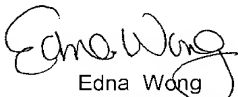
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edna Wong whose telephone number is (703) 308-3818. The examiner can normally be reached on Mon-Fri 7:30 am to 5:00 pm, alt. Fridays off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on (703) 308-3322. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1495.

  
Edna Wong  
Primary Examiner  
Art Unit 1753

EW  
December 8, 2003